

What Is Claimed Is:

1. A method of optically reading varying optical reflectivity along respective orthogonal axes of an information area, comprising the steps of:
  - (a) positioning a user-supported optical reader, the optical reader containing a photosensor capable of reading along row and column pixel axes, such that orthogonal axes of an information area to be read occupy a range of angular relationships to the pixel axes along which the photosensor reads;
  - (b) focusing the user-supported optical reader on the information area;
  - (c) imaging, for said range of angular relationships, the information area onto the photosensor so that the information content of the information area is imaged onto the photosensor without requiring prior angular movement of the user-supported optical reader; and
  - (d) generating a digital representation of the information content imaged from the information area onto the photosensor for any angular relationship between said orthogonal axes of the information area and the pixel axes along which the photosensor images.
2. The method of claim 1, further comprising the step of aiming the user-supported optical indicia reader by holding it with a hand.

3. The method of claim 1, wherein said generating step can generate a digital representation of the information content when the information content is conveyed via a bar code located within the information area.

4. The method of claim 1, wherein said generating step can generate a digital representation of the information content when the information content is conveyed via a human-readable character located within the information area.

5. The method of claim 1, wherein said generating step can generate a digital representation of the information content when the information content is conveyed via a bar code or a human-readable character located within the information area.

6. The method of claim 5, wherein said generating step further comprises a recognizing step to determine whether the information content is being conveyed via a bar code or via a human-readable character.

7. The method of claim 1, wherein said imaging step further comprises the step of illuminating the entire information area instantaneously with a flash of light.

8. The method of claim 1, wherein said range of angular relationships exceeds the angular range defined by diagonals of the information area to be read.

9. The method of claim 1, further comprising a calibrating step to identify faults in the photosensor.

10. A user-supported data collection apparatus, comprising:

- (a) a photosensor area array, located in the user-supported data collection apparatus, positioned to capture an image of an imaging area located externally of the user-supported data collection apparatus, said photosensor area array outputting a signal descriptive of the imaging area;
- (b) a focus system, located in said user-supported data collection apparatus, to focus the imaging area onto said photosensor area array; and
- (c) a reading system having an input accepting the signal output by said photosensor area array, said reading system further having an analysis system capable of converting the inputted signal into a decoded signal representative of information contained within an imaged optical indicia;

the reading system being capable of generating a decoded signal regardless of the orientation of the optical indicia relative to said photosensor area array.

11. The user-supported data collection apparatus of claim 10, further comprising a housing accommodating hand-held usage of the user-supported data collection apparatus.

12. The user-supported data collection apparatus of claim 10, wherein said reading system can generate a decoded signal when an optical indicia is a bar code.

13. The user-supported data collection apparatus of claim 10, wherein said reading system can generate a decoded signal when an optical indicia is a human-readable character.

14. The user-supported data collection apparatus of claim 10, wherein said reading system can generate a decoded signal when an optical indicia is a bar code or a human-readable character.

15. The user-supported data collection apparatus of claim 14, wherein said reading system comprises a recognition system to determine whether the optical indicia is a bar code or a human-readable character.

16. The user-supported data collection apparatus of claim 10, further comprising an instantaneous illumination component.